



IFW

Docket No.: 0020-5397PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Takuma SAWATANI et al.

Application No.: 10/541,601

Confirmation No.: N/A

Filed: July 7, 2005

Art Unit: N/A

For: ARRAY ANTENNA CONTROL DEVICE AND
ARRAY ANTENNA DEVICE

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BEST AVAILABLE COPY

Sir:

Subsequent to the filing of the above-identified application on July 7, 2005, attached hereto is the International Preliminary Report on Patentability issued by the International Bureau on behalf of the International Searching Authority. Please make this document of record for the above-identified application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: March 17, 2006

Respectfully submitted,

By 

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Attachment(s) PCT/IB/326, PCT/IB/338

**PCT**

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

From the INTERNATIONAL BUREAU

To:

KAWAMIYA, Osamu
Aoyama & Partners, IMP Building
3-7, Shiromi 1-chome, Chuo-ku
Osaka-shi, Osaka 540-0001
JAPON

Date of mailing (day/month/year) 15 September 2005 (15.09.2005)	
Applicant's or agent's file reference 664163	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/000072	International filing date (day/month/year) 08 January 2004 (08.01.2004)
Applicant ADVANCED TELECOMMUNICATIONS RESEARCH INSTITUTE INTERNATIONAL et al	

1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Masashi Honda

Facsimile No.+41 22 740 14 35

Facsimile No.+41 22 338 70 10

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 664163	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2004/000072	International filing date (<i>day/month/year</i>) 08 January 2004 (08.01.2004)	Priority date (<i>day/month/year</i>) 08 January 2003 (08.01.2003)]
International Patent Classification (IPC) or national classification and IPC ⁷ H01Q 3/44		
Applicant ADVANCED TELECOMMUNICATIONS RESEARCH INSTITUTE INTERNATIONAL		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 40%;">Box No. I</td> <td style="width: 50%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 02 September 2005 (02.09.2005)
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold;">Masashi Honda</div>
Telephone No. +41 22 338 70 10	

PATENT COOPERATION TREATY

Translation

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year)	13-04-2004
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Applicant's or agent's file reference 664163	FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/JP2004/000072	International filing date (day/month/year) 08-01-2004	Priority date (day/month/year) 08-01-2003
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International Patent Classification (IPC) or both national classification and IPC
H01Q 3/44

Applicant
ADVANCED TELECOMMUNICATIONS RESEARCH INSTITUTE INTERNATIONAL

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/000072

Box No. I Basis of the report

1. With regard to the language, this opinion has been established on the basis of:
 - ☐ the international application in the language in which it was filed
 - ☐ the translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rule 12.3(a) and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☐ furnished subsequently to this Authority for the purposes of search
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/000072

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-22	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-22	NO
Industrial applicability (IA)	Claims	1-22	YES
	Claims		NO

2. Citations and explanations:

Document 1: Takashi Enoki, "5GHz-tai keitai tanmatsu-you sector antenna no kirikae housha tokusei," 2002-nen The Institute of Electronics, Information and Communication Engineers Sougou Taikai Kouen Ronbun-shuu, 7 March 2000, B-1-75

Document 2: JP 2002-111559 A (Hitachi Kokusai Electric Inc.), 12 April 2002

Document 3: JP 2002-374116 A (Toyo Communication Equipment Co., Ltd.), 26 December 2002

The invention set forth in claims 1 to 6 and 10 to 19 does not involve an inventive step in the light of document 1 cited in the international search report. Document 1 discloses an antenna that allows switching of directivity, either in two directions with three elements, or in four directions with five elements, and a person skilled in the art could easily conceive of using the above antenna as a directivity switched diversity antenna. Further, when switching directivity, making a selection so that signal quality (signal strength,

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/000072

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

S/N ratio, or the like) is maximized or equals or exceeds a specified value is standard practice in diversity-related technology.

The invention set forth in claims 7 and 8 does not involve an inventive step in the light of document 1 cited in the international search report. Switching to a different directivity when signal quality is less than a specified threshold value is merely a known technique in switched diversity using directivity or the like (see document 2, for example).

The invention set forth in claim 9 does not involve an inventive step in the light of document 1 cited in the international search report. When setting a threshold value so as to satisfy specified selection criteria, performing switching while changing the threshold value within a specified range is merely a conventional means for a person skilled in the art.

The inventions set forth in claims 20 to 22 do not involve an inventive step in the light of documents 1 to 3 cited in the international search report. Document 3 discloses an invention wherein a grounding surface is formed in a specified region of the rear surface of a dielectric substrate, and a monopole antenna is formed so as to project from the region on the front surface of the above substrate that is opposite the above specified region.

PATENT COOPERATION TREATY

f03f

**PCT**

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

From the INTERNATIONAL BUREAU

To:

KAWAMIYA, Osamu
Aoyama & Partners, IMP Building
3-7, Shiromi 1-chome, Chuo-ku
Osaka-shi, Osaka 540-0001
JAPON

Date of mailing (day/month/year) 21 July 2005 (21.07.2005)		
Applicant's or agent's file reference 664163		IMPORTANT NOTICE
International application No. PCT/JP2004/000072 ✓	International filing date (day/month/year) 08 January 2004 (08.01.2004) ✓	
Priority date (day/month/year) 08 January 2003 (08.01.2003) ✓		
Applicant ADVANCED TELECOMMUNICATIONS RESEARCH INSTITUTE INTERNATIONAL et al ✓		

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Masashi Honda

Facsimile No.+41 22 740 14 35

Facsimile No.+41 22 338 70 10

外国方式

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 664163 /	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2004/000072 /	International filing date (<i>day/month/year</i>) 08 January 2004 (08.01.2004) /	Priority date (<i>day/month/year</i>) 08 January 2003 (08.01.2003)] /
International Patent Classification (IPC) or national classification and IPC H01Q 3/44		
Applicant ADVANCED TELECOMMUNICATIONS RESEARCH INSTITUTE INTERNATIONAL /		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 08 July 2005 (08.07.2005)
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; margin: 10px 0;">Masashi Honda</div> Telephone No. +41 22 338 70 10

特許協力条約

発信人 日本国特許庁 (国際調査機関)

REC'D 15 APR 2004

WIFO PCT

出願人代理人
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〒 5400001

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青山特許事務所

PCT

国際調査機関の見解書
(法施行規則第40条の2)
[PCT規則43の2.1]

発送日
(日.月.年)

13. 4. 2004

出願人又は代理人
の書類記号

664163

今後の手続きについては、下記2を参照すること。

国際出願番号

PCT/J P 2004/000072

国際出願日

(日.月.年) 08. 01. 2004

優先日

(日.月.年) 08. 01. 2003

国際特許分類 (IPC)

Int. Cl⁷ H01Q3/44

出願人 (氏名又は名称)

株式会社国際電気通信基礎技術研究所

1. この見解書は次の内容を含む。

- ☒ 第I欄 見解の基礎
- ☐ 第II欄 優先権
- ☐ 第III欄 新規性、進歩性又は産業上の利用可能性についての見解の不作成
- ☐ 第IV欄 発明の単一性の欠如
- ☒ 第V欄 PCT規則43の2.1(a)(i)に規定する新規性、進歩性又は産業上の利用可能性についての見解、それを裏付けるための文献及び説明
- ☐ 第VI欄 ある種の引用文献
- ☐ 第VII欄 国際出願の不備
- ☐ 第VIII欄 国際出願に対する意見

2. 今後の手続き

国際予備審査の請求がされた場合は、出願人がこの国際調査機関とは異なる国際予備審査機関を選択し、かつ、その国際予備審査機関がPCT規則66.1の2(b)の規定に基づいて国際調査機関の見解書を国際予備審査機関の見解書とみなさない旨を国際事務局に通知していた場合を除いて、この見解書は国際予備審査機関の最初の見解書とみなされる。

この見解書が上記のように国際予備審査機関の見解書とみなされる場合、様式PCT/ISA/220を送付した日から3月又は優先日から22月のうちいずれか遅く満了する期限が経過するまでに、出願人は国際予備審査機関に、適当な場合は補正書とともに、答弁書を提出することができる。

さらなる選択肢は、様式PCT/ISA/220を参照すること。

3. さらなる詳細は、様式PCT/ISA/220の備考を参照すること。

見解書を作成した日

24. 03. 2004

名称及びあて先

日本国特許庁 (ISA/J P)

郵便番号100-8915

東京都千代田区霞が関三丁目4番3号

特許庁審査官 (権限のある職員)
新川 圭二

5 T

3 2 4 5

電話番号 03-3581-1101 内線 3526

様式PCT/ISA/237 (表紙) (2004年1月)

第 I 欄 見解の基礎

1. この見解書は、下記に示す場合を除くほか、国際出願の言語を基礎として作成された。

- ☐ この見解書は、_____ 語による翻訳文を基礎として作成した。
それは国際調査のために提出された PCT 規則 12.3 及び 23.1(b) にいう翻訳文の言語である。

2. この国際出願で開示されかつ請求の範囲に係る発明に不可欠なヌクレオチド又はアミノ酸配列に関して、以下に基づき見解書を作成した。

- a. タイプ ☐ 配列表
☐ 配列表に関連するテーブル
- b. フォーマット ☐ 書面
☐ コンピュータ読み取り可能な形式
- c. 提出時期 ☐ 出願時の国際出願に含まれる
☐ この国際出願と共にコンピュータ読み取り可能な形式により提出された
☐ 出願後に、調査のために、この国際調査機関に提出された

3. ☐ さらに、配列表又は配列表に関連するテーブルを提出した場合に、出願後に提出した配列若しくは追加して提出した配列が出願時に提出した配列と同一である旨、又は、出願時の開示を超える事項を含まない旨の陳述書の提出があった。

4. 補足意見：

第V欄 新規性、進歩性又は産業上の利用可能性についてのPCT規則43の2.1(a)(i)に定める見解、それを裏付ける文献及び説明

1. 見解

新規性 (N)

請求の範囲 1-22 有
請求の範囲 無

進歩性 (IS)

請求の範囲 有
請求の範囲 1-22 無

産業上の利用可能性 (IA)

請求の範囲 1-22 有
請求の範囲 無

2. 文献及び説明

文献1：榎高志、5GHz帯携帯端末用セクタアンテナの切換放射特性、2000年電子情報通信学会総合大会講演論文集、2000.03.07、B-1-75

文献2：JP 2002-111559 A (株式会社日立国際電気) 2002.04.12

文献3：JP 2002-374116 A (東洋通信機株式会社) 2002.12.26

請求の範囲1-6, 10-19に係る発明は、国際調査報告で引用された文献1により進歩性を有しない。文献1には3素子で2方向又は5素子で4方向に指向性を切換可能なアンテナが記載されており、上記アンテナを指向性切換ダイバーシティアンテナとして用いることは当業者にとって容易である。また、指向性を切換える場合に、信号品質 (信号強度、SN比、等) が最大或いは所定値以上となるよう選択することは、ダイバーシティ技術における技術常識的事項である。

請求の範囲7, 8に係る発明は、国際調査報告で引用された文献1により進歩性を有しない。指向性等の切換ダイバーシティにおいて、信号品質が所定のしきい値未満となったときに別の指向性に切換えることは周知技術に過ぎない (例えば文献2等参照)。

請求の範囲9に係る発明は、国際調査報告で引用された文献1により進歩性を有しない。所定の選択基準を満足するようしきい値を設定するにあたり、しきい値を所定の範囲で変化させながら切換える程度のことは、当業者にとっての常套手段に過ぎない。

請求の範囲20-22に係る発明は、国際調査報告で引用された文献1, 3により進歩性を有しない。文献3には、誘電体基板の裏面の所定の領域にアース面が形成され、上記基板の表面の上記領域に対向する領域から突出するように形成されたモノポール型のアンテナが記載されている。

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